

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1. – 23. (Canceled)

24. (New) A method of modifying a plant phenotype, comprising:

transforming a plant with an expression vector comprising a nucleotide sequence encoding a plant non-symbiotic hemoglobin or an antisense sequence thereto, thereby yielding a transformed plant having an altered level of expression of non-symbiotic plant hemoglobin as compared to a non-transformed control plant that is not transformed to alter the level of expression of non-symbiotic plant hemoglobin,

wherein said transformed plant exhibits, under normal oxygen conditions, a plant phenotype that is modified as compared to said non-transformed control plant,

wherein said phenotype is selected from the group consisting of shoot or root apical dominance; flower color; and chlorophyll content,

wherein, when said transformed plant exhibits an increased level of expression of non-symbiotic hemoglobin as compared to said non-transformed control plant, said plant exhibits increased shoot apical dominance or greater root apical dominance under normal oxygen conditions as compared to said non-transformed control plant.

25. (New) The method of claim 24, wherein said transformed plant exhibits an increased level of expression of non-symbiotic hemoglobin as compared to said non-transformed control plant.

26. (New) The method of claim 25, wherein said transformed plant exhibits increased shoot apical dominance under normal oxygen conditions as compared to said non-transformed control plant.

27. (New) The method of claim 25, wherein said transformed plant exhibits reduced flower pigmentation under normal oxygen conditions as compared to said non-transformed control plant.
28. (New) The method of claim 24, wherein said transformed plant exhibits a decreased level of expression of non-symbiotic hemoglobin as compared to said non-transformed control plant.
29. (New) The method of claim 25, wherein said method comprises transforming said plant with an expression vector comprising a nucleic acid molecule encoding a plant non-symbiotic hemoglobin.
30. (New) The method of claim 28, wherein said method comprises transforming said plant with an expression vector comprising an antisense plant non-symbiotic hemoglobin nucleic acid molecule.
31. (New) The method of claim 24, wherein said expression vector comprises an inducible promoter that permits selective induction of expression of a plant non-symbiotic hemoglobin.
32. (New) The method of claim 24, wherein said expression vector comprises a repressible promoter that permits selective repression of expression of a plant non-symbiotic hemoglobin.